BEFORE THE UNITED STATES

ENVIRONMENTAL PROTECTION AGENCY

In the Matter of:	
McAULEY OIL COMPANY.	
Respondent.	Docket No. 84-14
Proceeding under Sections 104 and 106 of the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. §9606.	ORDER

This Administrative Order (Order) is issued to the above-named Respondent by the United States Environmental Protection Agency (EPA), pursuant to Sections 104(a),(b), and (e) and 106(a) of the Comprehensive Environmental Response Compensation and Liability Act of 1980 (CERCLA), 42 U.S.C. §9604(a),(b), and (e) and §9606(a), by authority delegated to the undersigned by the Administrator of the United States Environmental Protection Agency. Notice of the issuance of this Order has been provided to the State of California.

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FINDINGS OF FACT

1. This Order relates to a parcel of land located south of Rosecrans Avenue and west of Sunny Ridge Drive in Fullerton, Orange County, California, known as the "Los Coyotes" parcel. (The legal description of the property is provided in Appendix B.) The Los Coyotes parcel, and an adjoining parcel known as the "Ramparts" parcel, comprise what is known as the McColl site (the "site"). The "Los Coyotes" parcel is about 3.5 acres and currently is used as a private golf course known as "Los Coyotes Country Club." The Los Coyotes parcel constitutes a facility as defined in §101(9) of CERCLA.

2. Respondent McAuley Oil Company ("McAuley") is incorporated under the laws of the State of California. McAuley is the owner of the "Los Coyotes" parcel at the McColl site.

Site History

3. The site was created as a disposal area for acid sludge wastes from the production of high octane aviation fuel. From 1942 to 1946, acid wastes from Southern California refineries were disposed of in the sumps created on the property, which was then in a rural area of Orange County. From 1951 to 1962, drilling muds were deposited on a portion of the Ramparts parcel in an attempt to mitigate the hazard that had been created by the acid wastes. In 1957, the Los Coyotes Golf Course and Country Club was constructed on top of the western six sumps. In the 1960's, developers began to build homes in the area adjacent to the site. Today, there are about 1,200 people living within one-half mile of the site .

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Site Chracterization

4. In 1982, Radian Corporation and TRC, Inc. conducted a characterization of the site and produced a report ("the Radian report"). The work consisted of surface and deep subsurface soil sampling, air emissions sampling and modeling from surface chambers, shallow mapping tubes, deep soil coreholes, a trench excavation to determine the depth of the wastes, air sampling and mapping of the extent and degree of the odors in the community, and limited groundwater monitoring.

5. According to the Radian report, approximately 150,000 cubic yards of waste and contaminated soil occupy 12 sumps on the site. The report states that the waste itself consists of 85,000 cubic yards of black, tar-like waste, hard asphaltic waste, and grey sludge-like drilling mud, characterized by a low pH (acid), high sulfur content, and high concentrations of organic sulfur, aromatics (benzenes) and aliphatic (straightchain) hydrocarbons. The soil below the waste has been contaminated by the acid component and the odiferous chemicals of the waste. Gas emissions from the undisturbed site produce low concentrations of sulfur dioxide and total hydrocarbons at the border of the site. Gas emissions also include benzene, toluene, and xylene. The chemical group of tetrahydrothiophenes is a cause of the odor problem in the community. This chemical is irritating to the human sense of smell in concentrations of a fraction of a part per billion, lower than can be detected in a laboratory. If the waste cap material is disturbed and the waste exposed without proper precautions, the gas emissions increase to about

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1,000 to 10,000 times that of the undisturbed contaminants. Arsenic has been detected in the soil on one portion of the site.

Sampling Data

6. The California Department of Health Services (DOHS) analyzed air emissions from the site based on available data from air sampling studies conducted by a number of agencies and private companies. DOHS analysis indicates that there may be about 50 substances in the air during odor episodes (times when wind carries the chemicals into the adjoining residential area) that could be attributed to the dump. The following substances are attributable to the McColl site (substances identified in air samples but not present in site waste material are not included in this list):

A. Alkanes, Alkenes and Alcohols

2-Methylbutane

1,1-Dimethylcyclopropane

Hexane

2-Methyhexane

Heptane

2,5-Dimethylhexane

2,3,4-Trimethylpentane

Pentane

2-Methylpentane

Methylcyclopentane

2,3-Dimethylpentane

Methylcyclohexane

2,2-Dimethylhexane

2,3,3-Trimethylpentane

2,3-Dimethylhexane

2,2,5-Trimethylhexane

Isooctane

Pentene

4-Methylcyclopentene

Butanol

2-Butoxyethanol

3-Methylheptane

Nonane

2-Pentene

3-Methylpentane

2-Ethyl-1-hexanol

Ethanol

B. Aromatics

1,2,4-Trimethylbenzene

o-xylene

Naphthalene

Toluene

m,p-xylene

Ethylbenzene

C. Thioethers

Tetrahydrothiophene

D. Sulfur Dioxide

E. Carbon Disulfide

F. Benzene

7. Analysis of samples from the waste site for pH by Radian and the State of California Department of Health Services (DOHS)

revealed that the waste is acidic, with the pH ranging from 0.17 to 1.8.

8. On October 9, 1980, EPA and the California DOHS sampled waste from the site, with selected results as follows:

Compound	Concentration
Arsenic	None Detected to 190 ppm
Benzene	<90 to 880 mg/kg
Toluene	130 to 810 mg/kg
Tetrahydrothiophene	75 to 140 mg/kg

9. A sample of waste from the site collected by the California DOHS on December 3, 1980, had an arsenic concentration of 10,100 ug/g.

10. EPA's analysis of waste and soil samples collected January 13, 1981, revealed the following concentrations:

Compound	Concentration
Benzene	5.6 to 220 mg/kg
Toluene	26 to 150 mg/kg
Xylene	None Detected to 660 mg/kg

11. Samples of waste from the site collected by California DOHS on June 1, 1981, revealed arsenic concentrations from <1.0 to 222.0 ug/g.

12. The State of California Air Resources Board analyzed emissions from soil and sludge from the site at room temperature as follows:

Compound	Concentration
Benzene	20 to 300 ppm
Toluene	9 to 100 ppm
Xylene	10 to 100 ppm
Aliphatic Hydrocarbons	7 to 1600 ppm

13. The California Air Resources Board sampled ambient air during coring on-site by California DOHS in November 1980 with the following results:

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Compound	Concentration
Benzene	8.2 to 43 ppm
Sulfur Dioxide	280 to 38,000 ppm

14. In 1982, TRC Environmental Consultants, Inc. under contract to the California DOHS, measured air emissions containing sulfur dioxide (SO_2) at the site perimeter during coring and trenching on-site by DOHS. SO_2 levels ranged from 10 to 2500 ppb. During the same time period benzene monitors in the community registered 5 to 170 ppb.

15. Arsenic concentrations from 0.043 to 0.523 mg/l and pH of 2.5 to 7.54 were found by the California Regional Water Quality Control Board in water runoff sampled from the site on January 21, 1982.

16. Benzene, toluene, xylene, and arsenic are hazardous substances as defined in §101(14) of CERCLA.

Endangerment

17. (A) Air Contaminants

Benzene, toluene and xylene, sulfur dioxide, and sulfur-containing organics are the most significant hazards to human health which are transmitted through the air.

(1) Benzene. Benzene has been detected in community air samples taken from the site. Benzene acts as a narcotic on the central nervous system. Acute benzene poisoning commences with nausea, vomiting, ataxia, and excitement, followed by depression and coma. Death can occur because of respiratory or cardiac failure. An exposure to 20,000 parts-per-million can be fatal within 5 to 10 minutes. Exposure to 100 parts-per-million daily can cause confusion, dizziness, fatigue, headache, nausea, and coma. There appears to be a correlation between benzene exposure

and leukemia in humans. Although benzene emissions from the undisturbed site have not been measured at hazardous levels, higher emissions have been measured from the disturbed site. Moreover, the threat of a benzene release from a site disturbance, such as an earthquake, may present a substantial danger to the surrounding community.

(2) Toluene and Xylene. Toluene and xylene have been detected in waste samples and air emissions from the site. Inhalation of toluene vapors may produce irritation of the upper respiratory tract, disturbance of vision, dizziness, nausea, collapse, and coma. Direct contact with skin and eyes causes burning. Inhalation of 200 parts per million for 8 hours may cause impairment of coordination or reaction time. Concentrations of 200 to 500 parts per million may cause headache, nausea, loss of appetite, lassitude, and impairment of coordination and reaction time. Higher concentrations may cause anemia, leucopenia and enlargement of the liver.

(3) Sulfur Dioxide. Sulfur dioxide has been detected in community air samples and in air emission samples taken at the site. At concentrations as low as 0.09 parts per million, sulfur dioxide acts as a respiratory irritant. During site disturbances, sulfur dioxide levels in the community have reached 1,000 parts per million. On-site emissions can be much higher, posing an imminent hazard to anyone disturbing the site.

(4) Sulfur-Containing Organics. These organics, which have been detected in community air samples, cause unpleasant odors at extremely low concentrations -- part-per-billion levels. There have been no studies to determine the effects of such

chemicals in humans.

(B) Water Contaminants

Storm water runoff from the site has contained arsenic in excess of the Federal drinking water standard. Samples of perched groundwater at 15 to 42 feet underlying the site reveal low pH and high arsenic and sulfate levels. The McColl site is underlain by a mixture of mudstone, sandstone and pebbly sandstone. Observation at and near the site reveal that the underlying soil contains an assemblage of lenses and layers of clay, silt, sand and gravel. If the waste remains in place, there are no known barriers to prevent the migration of hazardous substances at the site into the ground water.

(C) Endangerment Through Direct Contact

People regularly walk upon the Los Coyotes parcel, which is used for a golf course. The Ramparts parcel, although fenced, is bordered by homes to the east and south, and the fence has not prevented children and others from entering the land. The two primary direct contact hazards are ingestion of arsenic and contact with acidic sludge.

(1) Arsenic. Arsenic has been detected in waste samples collected at the site in concentrations of 10,100 ug/g. There is strong evidence that arsenic is a skin and lung carcinogen in humans. Although the fatal dose of arsenic depends on body weight, ingestion of a "pinch" of soil of such concentration could produce acute poisoning, especially in children.

(2) Acidic Sludge. Acidic liquids oozing near the surface pose a danger to humans. Golfers and children looking for lost golf balls are likely to be exposed to direct contact

with the waste, which can cause burns to the eyes and skin. The State DOHS Health Survey identified the significant risks of harm to people from direct contact with the site:

> "Scientists from the [State of California] Department of Health Services are concerned about the potential health effects from direct contact with waste materials on these sites. Seepage materials on the Los Coyotes Golf Course are very acidic and could cause burns to the eyes or skin from direct contact. On the Ramparts portion of the McColl site there is also the potential for acid burns. Digging of a shallow hole a foot or two deep could release a quantity of sulfur dioxide gas measurable in the thousands of parts per million range. This could cause respiratory burns or precipitate an asthmatic attack in individuals who are standing within a few feet of the hole. Finally, there is at least one area (near the southwest corner of Ramparts) with concentrations of arsenic sufficiently high that accidental ingestion of a pinch of soil could produce acute poisoning within 48 hours. These facts lead scientists and physicians from the Department of Health Services to conclude that direct contact with the site poses a significant public health hazard." ("The McColl Site Health Survey, An Epidemiological and Toxicological Assessment of the McColl Hazardous Waste Disposal Site," August 1983, p. 9.)

(D) Documented Human Health Symptoms

There are approximately 1,200 people living within one-half mile of the site. The State of California Department of Health Services Epidemiological Studies Section conducted an

epidemiological and toxicological assessment of nearby residents which was completed in August, 1983. Among the study findings were the following:

(1) Adults and children in the area show an excess of such symptoms as eye irritation, nausea, headaches, and sore throats.

(2) Complaints of odor were much more common from residents of the McColl area than from residents of the control area.

(3) The number of physician consultations per child were higher in the McColl area than in the control area.

(4) More women in the McColl area reported disturbances with their menstrual pattern than in the control area.

(5) It is impossible now to adequately assess whether the McColl site presents a danger to area residents of increased cancer or birth defects. A small population, followed for only a few years after first exposure, would not be expected to have a detectable increase in cancer rates. The population surrounding the site is much smaller than that necessary for adequate epidemiological studies. In order to detect a statistically significant difference in symptoms such as cancer, miscarriage, stillbirths, prematurity, and birth defects, the residents near the site would have to exhibit five to twenty times more symptoms than the control neighborhood. No differences of that magnitude have been detected. Differences of a lesser, though still serious, magnitude cannot be ruled out, however.

18. Earthquake Danger. The McColl site is located on the Coyote Hills uplift. A low scarp along the south margin of the Coyote Hills is surface evidence of an active fault, and a source of earthquakes. There have been earthquakes of magnitude 6 or

greater in this area in the past, and the Seismologist for the California Division of Mines and Geology states that it is reasonable to expect similar and larger shocks in the future. There are seven active faults within 16 miles of the McColl site: the Norwalk, El Modeno, Whittier, Elsinore, Whittier-Elsinore, Newport-Inglewood, and the offshore zone of deformation (ranging from the Newport-Inglewood fault to the north to and including the Rose Canyon fault on the south). The closest fault is the Norwalk, less than one mile from the site.

19. The State DOHS made stability analyses of postulated failure surfaces along nine (9) cross sections of the site (through three places on the lower berm and six places on the upper berm). Under conditions of seismic shaking, two (2) of the cross sections would fail (there would be earth movement) when dry and seven (7) would fail when saturated.

20. The State Department of Health Services Geotechnical investigation of the McColl site indicated that an earthquake of magnitude 6 or greater would cause "a slumping of the complete upper berm and a significant slump of the lower berm" into a backyard adjacent to the site, and that there could be enough offsite movement for mudflow to reach the edge of the swimming pool on the lot adjacent to the lower berm. The State report concluded:

> "The most significant aspect of these failures [of the berms] would be a rupture of the waste, with as much as 3,000 square feet of exposed surface area. This would allow the release of a significant amount of noxious gases, consisting of SO_2, H_2S, and others." ("Geotechnical In-

vestigation of the McColl Site," January 8, 1982, Alternative Technology and Policy Development Section, Department of Health Services, p. 5.)

Administrative Actions

21. On January 13, 1984, the California Department of Health Services determined, on the basis of its factual review of the site, that there may be an imminent or substantial endangerment to the health or welfare or to the environment at the site. The Department's principal findings and recommendations were summarized as follows:

> "The McColl hazardous waste site in Fullerton consists of acid refinery sludge high in sulfur compounds. Four of the sumps are exposed on land adjacent to a residential development. There has been a history of odor complaints due to emissions of sulfur dioxide, thiophenes and other hydrocarbons. Sulfur dioxide is found on site and is highly toxic at the concentrations observed. A temporary cover was placed over four of the sumps to stop the emission of gases. This was only intended as an interim measure and is now resulting in emissions reoccurring. A health study has indicated that the site has had measurable health effects such as asthma, headaches, and sore throats of residents in the neighborhood. This represents an imminent or substantial endangerment to public health and the environment due to a threatened release of hazardous substances."

22. On April 11, 1984, the Environmental Protection Agency determined that excavation and redisposal of the waste and con-

taminated soil at the McColl site was the cost-effective remedial alternative, pursuant to 40 CFR 300.68(j). A Record of Decision, signed by Lee Thomas, Assistant Administrator for Solid Waste and Emergency Response, on April 11, 1984 is incorporated herein as Appendix C.

23. In order to protect public health and welfare and the environment, EPA has ordered the responsible parties to implement the Remedial Plan more fully described in the attached Appendix A. The Plan essentially involves the excavation and removal of the waste from the site to an approved disposal facility.

24. For the purposes of implementing the Remedial Plan, access to the Los Coyotes parcel will be necessary.

25. EPA has sought access to the property (pursuant to Sections 104(a), (b), and (e), and 106(a) of CERCLA, 42 U.S.C. §9604(a), (b), and (e) and 9606(a)) by voluntary agreement for the purposes described herein, but EPA's request for access has been denied.

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CONCLUSIONS OF LAW

1. The Los Coyotes parcel of the McColl site is a "facility" as defined in Section 101(9) of CERCLA, 42 U.S.C. 9601(9).

2. Respondent is a "person" as defined in Section 101(21) of CERCLA, 42 U.S.C. 9601(21).

3. Wastes sent to and disposed of at the site include "hazardous substances" as defined in Section 101(14) of CERCLA, 42 U.S.C. 9601(14).

4. The past, present, and potential migration of hazardous substances from the facility into the air and water constitutes actual and threatened "release" as defined in Section 101(22) of CERCLA, 42 U.S.C. 9601(22).

5. Respondent McAuley Oil Company is a responsible party pursuant to §107(a)(1) of CERCLA, because it owns the Los Coyotes parcel.

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DETERMINATIONS

Based upon the foregoing FINDINGS OF FACT and CONCLUSIONS OF LAW, EPA has determined that:

1. The actual and threatened release of hazardous substances from the facility may present an imminent and substantial endangerment to the public health, welfare, and the environment.

2. The response actions required by this Order are necessary to protect public health and welfare and the environment.

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ORDER

Based upon the foregoing FINDINGS OF FACT, CONCLUSIONS OF LAW, and DETERMINATIONS, IT IS HEREBY ORDERED:

I. Access.

Effective immediately, Respondent shall not deny or impede in any manner access to Los Coyotes parcel for the Environmental Protection Agency, its employees, agents, contractors, assignees, transferees and successors or other authorized persons, including the State of California and the Respondents named in EPA Region 9 Order No. 84-13 (Shell Oil Company, Union Oil Company, Texaco, Inc., Atlantic Richfield Company, Getty Oil Company, Aminoil, Inc., and Eric Eulen) and the State's or Respondents' employees, agents, contractors, assignees, transferees and successors, for the following purposes:

A. Access to the property to accomplish all of the activities necessary to implement the Remedial Plan for the excavation of the waste on the site, as more fully described in Appendix A.

B. Access to the property to conduct any and all other activities necessary to investigate, monitor, survey, test, and gather information to identify the existence and extent of the release of hazardous substances or the threat thereof, the source and nature of the hazardous substances, pollutants or contaminants involved, and the extent of the danger to the public health or welfare or to the environment.

C. Access to the property to enforce the provisions of Title I of CERCLA.

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II. Enforcement

Violation of this Order shall be enforceable pursuant to Sections 106(b) and 113(b) of CERCLA, 42 U.S.C. 9606(b) and 9613(b).

III. Penalties for Noncompliance

Failure to comply may also subject Respondent to civil penalties and/or punitive damages in an amount up to three times the amount of any costs incurred by the United States as a result of such failure, as provided in Sections 106(b) and 107(c)(3) of CERCLA, 42 U.S.C. 9606(b) and 9607(c)(3). Nothing herein shall preclude EPA from taking such other actions as may be necessary to protect the public health and welfare or the environment and recovering the costs thereof.

IV. Parties Bound

This Order shall apply to and be binding upon the Respondent, its officers, directors, agents, employees, contractors, successors, and assigns.

V. Opportunity to Confer

The Respondent may request, within seven (7) days after receipt of this Order, a conference with EPA to be held within fourteen (14) days of the date of issuance to discuss this Order, including its applicability, the factual determinations upon which the Order is based, the appropriateness of any actions which the Respondent is ordered to take, or any other relevant and material issues or contentions which Respondent may have regarding this Order. Respondent may appear in person or by an attorney or other representative at any conference held at its request. Any request for a conference should be made to:

William D. Wick
Assistant Regional Counsel
EPA, Region 9
215 Fremont Street
San Francisco, CA 94105
(415) 974-8039

VI. Effective Date

This Order is effective twenty-one (21) days after the date of issuance, notwithstanding any conferences requested pursuant to paragraph V above, and all times for performance or response activities shall be calculated from that date.

Date of Issuance: 20 JUL 1984

By: Judith E. Ayres

Judith E. Ayres
Regional Administrator
U. S. Environmental Protection Agency
Region 9
215 Fremont Street
San Francisco, CA 94105